TO: Board of Supervisors

FROM: Bob Lilley, Agricultural Commissioner/Sealer

DATE: August 3, 2004

SUBJECT: Discussion of Genetically Engineered Crops in San Luis Obispo County

Recommendation:

Accept and File report on Genetically Engineered Crops in San Luis Obispo County.

Discussion:

On April 20, 2004 your Board directed the Agricultural Commissioner to work with local groups to evaluate the growing of genetically engineered (GE) crops in San Luis Obispo County and report back with more information. Your Board's first meeting on this topic was April 6, 2004 in response to a proposal to grow genetically modified rice in San Luis Obispo County. This proposal was denied by the California Department of Food and Agriculture on the basis that it did not qualify as an emergency regulation pertaining to State Rice Identity Preservation regulation, and the request was directed to the standard California rule making process.

To implement your directive of April 20, 2004 I formed a local committee to evaluate the various issues associated with growing genetically engineered crops in San Luis Obispo County. The committee titled "Committee for the Evaluation of Growing Genetically Engineered Crops in San Luis Obispo County" was made up by representatives from the following groups:

- University of California Cooperative Extension (committee facilitator)
- SLO GE Free
- San Luis Obispo County Farm Bureau
- California Certified Organic Farmers
- San Luis Obispo County Health Agency
- San Luis Obispo County Agricultural Commissioner

Subsequent to your Board's April 20, 2004 meeting, a local ballot measure to establish a county ordinance prohibiting the growing of genetically engineered organisms in San Luis Obispo County qualified for the November 2, 2004 ballot. The Agricultural Commissioner is "neutral" on the ballot measure but will provide a summary of information generated by the committee, and provide a status report on related issues from other counties, the State of California, and the Federal government. This report is not intended to provide an assessment of the ballot measure.

The subject of GE crops or genetically modified organisms (GMO) is a very complex topic. It crosses the lines between a highly technical/scientific topic; to a social/moral/ethical issue; to a local, state, national, and international issue related to agriculture, food, medicine, product development, and economics. The topic also brings forward concerns about health, environmental, regulatory, legal and trade issues; while at the same time holding promise for future technological advancement. To narrow the scope of this review, we will be focusing this report on growing genetically engineered crops in San Luis Obispo County.

Attached is a complete report from the Committee for the Evaluation of Growing Genetically Engineered Crops in San Luis Obispo. The committee met 12 times between April 30, 2004 and July 15, 2004 (minutes of each meeting are attached as Appendix A). The committee established the following objective to provide a level of focus on this complex topic: "Our objectives are to provide information to the Board of Supervisors on growing genetically engineered (GE) crops in San Luis Obispo County about issues that are within their abilities to influence: to include basic information on definitions, terms, and techniques for biotechnology, genetic engineering, organic and conventional production. We will strive to deliver this information in the context of the consumers choice for locally grown produce and the producers choice for how and what they grow." The committee deserves recognition for long hours and commitment to addressing this difficult issue, and for their respect for differing points of view.

The committee realized that it was nearly impossible to come to a traditional consensus about a local approach to address the various issues associated with GE crops. There was general consensus about the identification of the various issues but many different opinions were presented about how to address them locally. The committee outlined and evaluated key issues associated with local GE crop production through the following attachments:

- Appendix B – Glossary of Selected Terms Related to Biotechnology and Genetic Engineering, provided by the University of California Cooperative Extension
- Appendix C - Regulation of Genetically Engineered Crops, provided by the Agricultural Commissioner's Office.
- Appendix D - Genetically Modified Organisms, San Luis Obispo County Counsel Legal Opinions, provided by the Health Department in consultation with County Counsel.
- Appendix E - Organic Certification and its Relation to Genetically Engineered Crops, provided by California Certified Organic Farmers representative.
- Appendix F - Genetically Engineered (GE) Organisms Health Implications, provided by the Health Department

It should be noted that there was no representation on the committee (or report) from the biotechnology industry, which produces GE crops, due to availability of a local representative.

Appendix B-F identify key issues related to GE crops which are important in developing an understanding of the "bigger picture" related to food, agriculture, health, and government regulation. The Health Implications report identifies the degree of food common on grocery

market shelves which are from GE sources, the number of GE organisms currently permitted and under commercial production, and a health analysis of consuming GE foods. Regulatory and legal issues are reviewed in two attachments which identify the federal government as having primary jurisdiction and a discussion about "Federal Preemption" of the law. The "Regulation of Genetically Engineered Crops" also identifies GE crops approved and under widespread production in the United States and evaluates the "GE potential" for the top 10 crops currently grown in San Luis Obispo County. Organic agriculture certification and how it relates to GE crops is also explained in a separate attachment.

The committee provided an explanation of the breeding techniques used for production agriculture. This is important in developing a basic understanding about traditional, "smart breeding", and genetic engineering approaches utilized for food, fiber, and nursery stock production. Following is a description of breeding techniques used for production agriculture:

- Natural selection- No human intervention/random selection.
- Classical cross breeding/hybridization- Plant and animal selection over generations for desired characteristics/traits under controlled conditions.
- Smart breeding- Movement of desired traits into the target plant/animal from the same species using highly controlled methods other than genetic engineering.
- Genetic engineering- Precise placement of desired traits (genetic material) from the same or different species using genetic engineering techniques such as virus or bacteria transportation, physical insertion, gene splicing, or chemical manipulation.

Plants and animals in production agriculture are "genetically modified" (the resulting offspring from breeding) using any of the above techniques. However, the term genetically modified organism (GMO) is commonly associated with genetic engineering. Genetic engineering refers to a specific technique (process) of plant or animal breeding.

Appendix G, "Implications of Actions by the Board of Supervisors Regarding Regulation of Genetically Engineered Crops in San Luis Obispo County" is an important analysis of the various potential issues associated with growing genetically engineered crops in San Luis Obispo County and the possible implications. The committee also evaluated various local options that your Board could consider for purposes of local control. However, these options are not recommended at this time due to the November 2, 2004 ballot measure.

The concept of potential risks and benefits of GE crops was introduced by the committee. "For some, the risks of genetic engineering outweigh the benefits; for others the benefits outweigh the risk" is taken from the introduction of the committee's Implications Table (Appendix G). Potential benefits of GE crops include varieties that have been developed to ward off pests, resist herbicides, resist disease, tolerate adverse growing conditions, and improve production and lower cost. GE crops may also enable industrial and pharmaceutical products to be produced cheaply and abundantly. The risks of GE crops include potential damage to human health and the environment, the contamination of conventional crops through pollen movement (gene flow), the

loss of efficacy of certain pesticides and herbicides due to the development of resistant pests, and adverse market place reaction. The concern surrounding these risks is heightened by a lack of adequate study about the long-term effects of GE crops, and the minimal regulatory controls in place at the state and local levels.

The implications table (Appendix G) provides details about various potential impacts (both positive and negative) of growing GE crops in San Luis Obispo County. The table separates the potential impacts based on five different levels of local control.

One section of the committee's implementation table (page 60-63) discusses regulatory and legal issues in the context of local enforcement. The Agricultural Commissioner would likely be the enforcing officer for any local ban or restriction on growing GE crops in the county. The ability to enforce a ban, ordinance, or regulation and the associated costs, are unclear at this time. The committee identifies the following questions and concerns:

- How is a prohibition going to be enforced without required notification of planting a GE crop, or the ability to visually determine if the crop is GE?
- Does the Agricultural Commissioner have the authority to enter private property to sample a crop for genetic lab testing?
- How much monitoring and investigation would be needed to enforce the provisions of a ban?
- What level of evidence would be necessary to order "confiscation and destruction" of a GE crop?
- What level of due process would need to be afforded to the grower before the Agricultural Commissioner could proceed with enforcement action?
- What authority exists to "impose a monetary penalty" and what are approved fine levels for violations of a GE crop ban?
- What are the associated costs for enforcement?

These issues would need to be resolved before the Agricultural Commissioner could adequately enforce a ban or limitation of planting GE crops in San Luis Obispo County. Also, a new local enforcement program, without additional funding, would represent an "unfunded mandate" for the Agricultural Commissioner's office.

This report has just "touched the surface" of the many issues related to growing GE crops. Also referenced in the committee's work are a number of web pages and other sources of additional information.

Other Agency Involvement

The San Luis Obispo County UC Cooperative Extension and Health Department participated on the committee; County Counsel, Clerk/Recorder, Administrative Office, and Auditor/Controller provided input for portions of the report; and the state and federal offices of the California

Department of Food and Agriculture, California Department of Pesticide Regulation, USDA, US Food and Drug Administration, and USEPA provided technical information.

Financial Considerations

The cost of the committee deliberations and preparation of this report is contained within existing budget units. However, the potential cost of an enforcement program for GE crops in San Luis Obispo County is unknown at this time.

Intended Results

Staff presentation of information from the Committee for the Evaluation of Growing Genetically Engineered Crops in San Luis Obispo County and hear public testimony.